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Patentanmeldung Nr.	Patent application No.	Demande de brevet n°

02100203.5

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R C van Dijk

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Application no.:   02100203.5
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Bezeichnung der Erfindung/Title of the invention/Titre de l'invention:
Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.
If no title is shown please refer to the description.
Si aucun titre n'est indiqué se referer à la description.)

Method for rendering two output formats simultaneously

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[ABSTRACT]

METHOD FOR RENDERING TWO OUTPUT FORMATS SIMULTANEOUSLY

A method for generating output data in a first and in a second output format simultaneously from input data by a renderer. The method includes dividing the input data into a plurality of bands and for each specific band out of the plurality of bands: generating the output data in the first output format for the specific band and generating the output data in the second output format for the specific band.

- 2 -

[DESCRIPTION]

As formats of imaging devices are increasingly getting bigger, and as the performance and reliability of a pre-press system are very important characteristics, new, optimized algorithms are required to maintain acceptable throughputs on standard hardware.

The rendering process, i.e. the translation from page description languages like Postscript or PDF to rastered output formats, for proofing and final output, is a very cumbersome process.

The invention implements a system where the renderer (aka the rip) will generate two output formats virtually simultaneously. The main output, typically intended for high resolution (e.g. 2400 dpi) monochrome (color separated) binary marking engines (screened output) and the auxiliary output (e.g. 720 dpi, contone, color managed, composite), typically used for proofers are generated at the same time.

To guarantee a completely consistent output for proofing, the proof output is preferably generated from the high resolution screened data intended for the main output device (CTP, CTF) by processing the screened data; this may involve descreening, zooming, color managing the screened data.

In prior art implementations, the main output is first stored on disk on a plane by plane basis (typically first the cyan separation is generated, followed by magenta, yellow, black and optionally the spot colors) and when requesting the proof, the main output data is read from disk (as mentioned, typically data for four color planes and for an additional plane per spot color), separations are recombined and the earlier described processing operations are done. The result is output to the proofer engine.

The invention preferably implements a special mode in the renderer that allows for the generation of bands of planar data. A band covers a subset of the data, so that all data belong to exactly one of the bands into which the data are divided. Typically, a first band of cyan is initially generated, then a first band of magenta, a first band of yellow, a first band of black, and optionally first bands for each separated spot color. After all the separations for the first band are generated in memory, the proofing processing (recombination, descreening, etc.) can start working on the first band and store the processed proofing data on disk or send it immediately to the proofer. Then, the process is repeated to generate a second band, and so on until all data are generated.

The major advantages are performance improvements and absolute guarantee that the output of the proofer will emulate exactly the final output.

[CLAIMS]

1. A method for generating output data in a first and in a second output
   format simultaneously from input data by a renderer, the method
   comprising the steps of:
   - dividing said input data into a plurality of bands;
   - for each specific band out of said plurality of bands:
     i) generating said output data in said first output format for said
        specific band by said renderer;
     ii) generating said output data in said second output format for
        said specific band by said renderer.

2. The method according to claim 1, further comprising the steps of:
   - sending said output data in said first output format to a main
     output device;
   - sending said output data in said second output format to a proofing
     device.

3. A data processing system comprising means for carrying out the steps
   of the method according to claim 1 or claim 2.

4. A computer program comprising computer program code means adapted to
   perform the steps of the method of claim 1 or claim 2 when said
   program is run on a computer.

5. A computer readable medium comprising program code adapted to carry
   out the method of claim 1 or claim 2 when run on a computer.

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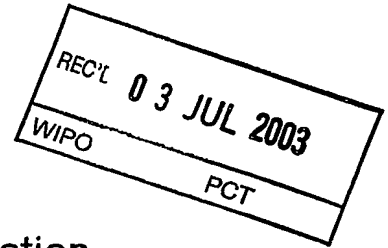
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